

REMARKS

Claims 1-21 and 24-35 are active in this application. Support for Claims 26-35 is found in Claims 1-25. No new matter is added by these claim amendments.

The cholesteric layered material in Claim 1 is not described by Takizawa et al (US Patent no. 5,631,665).

Claim 1 is a cholesteric layered material comprising at least one three-dimensionally crosslinked, aligned cholesteric layer, wherein the crosslinked cholesteric layer(s) does (do) not exhibit any color shift which can be induced by external stimuli.

In contrast, Takizawa et al describe a liquid crystal device with cholesteric material (12) that is incorporated into pores (11) of a transparent matrix (21), which then sandwiches a composite film (1). In particular, Applicants refer to Figures 2 and 3 as well as the corresponding discussion in the text of Takizawa et al in column 5, lines 55-60 and column 6, lines 1-17. Clearly, this is not the same as a cholesteric **layer** as in Claim 1.

In addition, Takizawa et al device do not describe the crosslinked cholesteric layer which does not exhibit any color shift which can be induced by external stimuli (see Claim 1) because in column 3, lines 21 to 26, Takizawa et al describe that the composite film changes to an opaque or transparent state relative to the voltage state applied.

Therefore, Claim 1 is not anticipated by Takizawa et al and withdrawal of the rejection under 35 U.S.C. § 102(b) is requested.

With respect to the rejection of Claims 2-4, 8-11, 14-15, 18 and 21 under 35 U.S.C. § 103(a) over Takizawa in view of Greenfield (U.S. Patent 6,417,902), Applicants submit herewith a certified English translation of the German application no 1940681.2 to which the present application claims priority. This German application was filed on August 27, 1999

Applicants request that this ground of rejection be withdrawn.

The objection to the claims is addressed by the amendment submitted herein, which has removed multiple dependencies.

The rejection of Claims 22 and 23 under 25 U.S.C. § § 112, second paragraph and 101 is obviated by the cancellation of these claims.

A substitute specification that is double-spaced is attached. No additional changes to text have been made and therefore, no new matter is added.

A new abstract of the disclosure is attached.

Corrected drawings are filed herewith.

Applicants submit that the present application is now ready for allowance. Early notification of such allowance is kindly requested.

Respectfully submitted,

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IN THE SPECIFICATION

Please replace pages 1-44 with the attached substitute pages 1-62.

Please delete the original Abstract at page 49 without prejudice.

At the end of the specification, please insert as the Abstract of the Disclosure, the attached substitute Abstract of the Disclosure.

IN THE CLAIMS

2. (Amended) [A] The cholesteric layered material as claimed in claim 1, wherein the external stimuli are selected from changes in the temperature of the layered material, in particular warming,
the action of diluents on the layered material, and combinations thereof.

3. (Amended) [A] The cholesteric layered material as claimed in claim 2, which exhibits no color shift on

- a) a change in the temperature in the range from -30°C to 250°C;
- b) warming to temperatures in the range from 80 to 160°C with simultaneous exposure to a diluent; and/or
- c) treatment for 15 minutes at 80°C in xylene followed by drying.

4. (Amended) [A] The cholesteric layered material as claimed in [one of the preceding claims] claim 1, wherein the reflection maximum of the cholesteric layer after the xylene treatment can be shifted by not more than about 10 nm into the higher or lower wavelength region.

preceding claims] claim 1, wherein the cholesteric layer has a mean dry layer thickness of

less than about 5 μm], in particular less than about 2 μm , preferably less than or equal to about 1 μm].

6. (Amended) [A] The cholesteric layered material as claimed in [one of the preceding claims] claim 1, wherein the cholesteric layer has a mean dry layer thickness of at least one pitch height.

7. (Amended) [A] The cholesteric layered material as claimed in [one of the preceding claims] claim 1, which comprises a plurality of color shift-stable cholesteric layers of identical or different thickness and identical or different chemical composition.

10. (Amended) [A] The process as claimed in claim 9, wherein a support is employed which does not adversely affect the alignment of the cholesteric layer cast thereon during drying and curing.

11. (Amended) [A] The process as claimed in [one of claims 9 and 10] claim 9, wherein the support has an adhesive strength of less than about 1 cN to the dried and crosslinked first cholesteric layer cast thereon.

12. (Amended) [A] The process as claimed in [one of claims 9 to 11] claim 9, wherein a layered material comprising a plurality of cholesteric layers is produced, where the second layer can be removed selectively from the first layer on the support as a composite with any further layers.

13. (Amended) [A] The process as claimed in [one of claims 9 to 12] claim 9, wherein the support is selected from the group consisting of a plastic support, a metal support, a glass support, and a ceramic support [supports].

14. (Amended) [A] The process as claimed in claim 13, wherein the plastic support comprises a release layer of crosslinked, [preferably] optionally aligned, cholesteric material

15. (Amended) [A] The process as claimed in claim 14, wherein the adhesion between the plastic support and the release layer is at least about twice the adhesion between release layer and first cholesteric layer.

16. (Amended) [A] The process as claimed in [one of claims 9 to 15] claim 9, wherein the coating compositions for the cholesteric layer(s) and the release layer independently of one another have a viscosity in the range from about 1 to 50 mPas, and the coating rate is in the range from about 1 to 800 m/min.

17. (Amended) [A] The process as claimed in [one of claims 9 to 16] claim 9, wherein the crosslinking of the cholesteric layer(s) and of any cholesteric release layer present is carried out by electron beams or UV radiation with simultaneous warming of the layer 25 to be cured, where the emitter power is in the range from about 50 to 200 watts/cm.

18. (Amended) [A] The process as claimed in claim 17, wherein the layer temperature during the radiation curing is at least 60°C[, in particular at least 80°C, preferably at least 90°C].

19. (Amended) [A] The process as claimed in claim 9 [one of claims 9 to 18], wherein a further support film is applied to the cholesteric layer applied last, and the one or more cholesteric layer(s) is (are) removed from the support as a composite.

20. (Amended) [A] The process as claimed in claim 9 [one of claims 9 to 18], wherein one or more cholesteric layer(s) is (are) removed from the support by blasting with compressed air, a water jet, steam or with the aid of a knife coater and ground to give pigments.

21. (Amended) A composition comprising at least one cholesteric pigment as claimed

Canceled Claims 22 and 23.

24. (Amended) A polarizer comprising a layered material as claimed in [one of claims 1 to 7] claim 1, which is, optionally, [if desired] applied to a support film.

25. (Amended) A broad-band polarizer comprising a layered material as claimed in claim 1 [one of claims 1 to 7] having a number of from 3 to 20 cholesteric layers with reflection maxima matched to one another, where the polarizer has a total thickness [()without support film[]] in the range from about 2 to 50 μm .

Claims 26-35 are New

ABSTRACT OF THE DISCLOSURE

The invention relates to a cholesteric layered material with improved color shift stability.